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May 28, 2019

Lori Stone
Cardno
1005 W. Washburn Pl
Saginaw, MI 48602

Work Order: **HS19051442**

Laboratory Results for: **Deer Park Fire 002 Day 20**

Dear Lori,

ALS Environmental received 1 sample(s) on May 23, 2019 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Generated By: DAYNA.FISHER
Dane J. Wacasey

Client: Cardno
Project: Deer Park Fire 002 Day 20
Work Order: HS19051442

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS19051442-01	WW-20190522-002-Dat 20	Water		22-May-2019 11:30	23-May-2019 18:18	<input type="checkbox"/>

Client: Cardno
Project: Deer Park Fire 002 Day 20
Work Order: HS19051442

CASE NARRATIVE

GCMS Semivolatiles by Method SW8270

Batch ID: 141191

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.
-

Client: Cardno
Project: Deer Park Fire 002 Day 20
Sample ID: WW-20190522-002-Dat 20
Collection Date: 22-May-2019 11:30

ANALYTICAL REPORT

WorkOrder:HS19051442
Lab ID:HS19051442-01
Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW-LEVEL SEMIVOLATILES BY 8270D		Method:SW8270		Prep:SW3510 / 24-May-2019		Analyst: GEY	
Bis(chloromethyl)ether		U	0.00020	0.00020	mg/L	1	25-May-2019 13:48
Surr: 2-Fluorobiphenyl	84.0			40-125	%REC	1	25-May-2019 13:48
Surr: 4-Terphenyl-d14	95.9			40-135	%REC	1	25-May-2019 13:48
Surr: Nitrobenzene-d5	77.3			41-120	%REC	1	25-May-2019 13:48

WEIGHT LOG

Client: Cardno
Project: Deer Park Fire 002 Day 20
WorkOrder: HS19051442

Batch ID: 141191	Method: LOW-LEVEL SEMIVOLATILES BY 8270D	Prep: 3510_B_LOW
-------------------------	-------------------------------------------------	-------------------------

SamplID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS19051442-01	1	980	1 (mL)	0.00102

Client: Cardno
Project: Deer Park Fire 002 Day 20
WorkOrder: HS19051442

DATES REPORT

Sample ID	Client Samp ID	Collection Date	TCLP Date	Prep Date	Analysis Date	DF
Batch ID 141191	Test Name : LOW-LEVEL SEMIVOLATILES BY 8270D			Matrix: Water		
HS19051442-01	WW-20190522-002-Dat 20	22 May 2019 11:30		24 May 2019 09:16	25 May 2019 13:48	1

Client: Cardno
Project: Deer Park Fire 002 Day 20
WorkOrder: HS19051442

QC BATCH REPORT

Batch ID: 141191 (0)		Instrument: SV-7		Method: LOW-LEVEL SEMIVOLATILES BY 8270D						
MBLK	Sample ID: MBLK-141191	Units: ug/L		Analysis Date: 25-May-2019 12:49						
Client ID:	Run ID: SV-7_339212	SeqNo: 5093128		PrepDate: 24-May-2019		DF: 1				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bis(chloromethyl)ether	U	0.20								
Surr: 2-Fluorobiphenyl	4.3	0.20	5	0	86.0	40 - 125				
Surr: 4-Terphenyl-d14	4.569	0.20	5	0	91.4	40 - 135				
Surr: Nitrobenzene-d5	3.956	0.20	5	0	79.1	41 - 120				

LCS	Sample ID: LCS1-141191	Units: ug/L		Analysis Date: 25-May-2019 13:09						
Client ID:	Run ID: SV-7_339212	SeqNo: 5093129		PrepDate: 24-May-2019		DF: 1				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bis(chloromethyl)ether	4.332	0.20	5	0	86.6	40 - 140				
Surr: 2-Fluorobiphenyl	4.798	0.20	5	0	96.0	40 - 125				
Surr: 4-Terphenyl-d14	4.937	0.20	5	0	98.7	40 - 135				
Surr: Nitrobenzene-d5	4.233	0.20	5	0	84.7	41 - 120				

LCSD	Sample ID: LCSD1-141191	Units: ug/L		Analysis Date: 25-May-2019 13:28						
Client ID:	Run ID: SV-7_339212	SeqNo: 5093130		PrepDate: 24-May-2019		DF: 1				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bis(chloromethyl)ether	4.255	0.20	5	0	85.1	40 - 140	4.332	1.81	20	
Surr: 2-Fluorobiphenyl	4.476	0.20	5	0	89.5	40 - 125	4.798	6.93	20	
Surr: 4-Terphenyl-d14	4.957	0.20	5	0	99.1	40 - 135	4.937	0.386	20	
Surr: Nitrobenzene-d5	4.32	0.20	5	0	86.4	41 - 120	4.233	2.02	20	

The following samples were analyzed in this batch: HS19051442-01

Client: Cardno
Project: Deer Park Fire 002 Day 20
WorkOrder: HS19051442

**QUALIFIERS,
ACRONYMS, UNITS**

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL/SDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

Unit Reported	Description
mg/L	Milligrams per Liter

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Illinois	004438	29-Jun-2019
Louisiana	03087	30-Jun-2019
Dept of Defense	ANAB L2231	20-Dec-2021
Kansas	E-10352 2018-2019	31-Jul-2019
Oklahoma	2018-156	31-Aug-2019
North Carolina	624-2019	31-Dec-2019
Maryland	343, 2018-2019	30-Jun-2019
Arkansas	19-028-0	27-Mar-2020
Texas	TX104704231-19-23	30-Apr-2020

Client:

Project:

Work Order:

Cardno
Deer Park Fire 002 Day 20
HS19051442

SAMPLE TRACKING

Lab Samp ID	Client Sample ID	Action	Date	Person	New Location
HS19051442-01	WW-20190522-002-Dat 20	Login	23/05/2019 19:11:34	PMG	EXT032

Sample Receipt Checklist

Client Name: Cardno - Saginaw MI
Work Order: HS19051442

Date/Time Received: **23-May-2019 18:18**
Received by: **JRM**

Checklist completed by: Paresh M. Giga 23-May-2019
eSignature Date

Reviewed by: Dane J. Wacasey 26-May-2019
eSignature Date

Matrices: **Water**

Carrier name: **Client**

Shipping container/cooler in good condition?
Custody seals intact on shipping container/cooler?
Custody seals intact on sample bottles?
VOA/TX1005/TX1006 Solids in hermetically sealed vials?
Chain of custody present?
Chain of custody signed when relinquished and received?
Samplers name present on COC?
Chain of custody agrees with sample labels?
Samples in proper container/bottle?
Sample containers intact?
Sufficient sample volume for indicated test?
All samples received within holding time?
Container/Temp Blank temperature in compliance?
Temperature(s)/Thermometer(s):
Cooler(s)/Kit(s):
Date/Time sample(s) sent to storage:
Water - VOA vials have zero headspace?
Water - pH acceptable upon receipt?
pH adjusted?
pH adjusted by:

Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	1 Page(s)
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	COC IDs:144339
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

11.1c U/C	IR25
Red	
5/23/19 19:15	

Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>

Login Notes: Samples received on ice; cooling process started.

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:



Cincinnati, OH
+1 513 733 5336

Everett, WA
+1 425 356 2600

Fort Collins, CO
+1 970 490 1511

Holland, MI
+1 616 399 6070

Chain of Custody Form

Page 1 of 1

COC ID: 144339

Houston, TX
+1 281 530 5656

Middletown, PA
+1 717 944 5541

Spring City, PA
+1 610 948 4903

Salt Lake City, UT
+1 801 266 7700

South Charleston, WV
+1 304 356 3168

York, PA
+1 717 505 5280

Customer Information		Project Information		ALS Project Manager:													ALS Work Order #:	
Parameter/Method Request for Analysis																		
Purchase Order		Project Name		A 8270 bis(chloromethyl)ether														
Work Order		Project Number		B														
Company Name	Cardnode-ITC	Bill To Company		C														
Send Report To	Lori Stone	Invoice Attn		D														
Address	121 Continental Dr. Suite 308	Address		E														
City/State/Zip	Newark, DE 19713	City/State/Zip		F														
Phone	989-714-9856	Phone		G														
Fax		Fax		H														
e-Mail Address	Lori.Stone@cardno.com	e-Mail Address		I														
				J														
No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold	
1	WW-20190522-002-Day 20	5/22/19	1130	W	8	2	X											
2																		
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		
Sampler(s) Please Print & Sign		Shipment Method		Required Turnaround Time: (Check Box)										Results Due Date:				
C. Rilla		FEDEX drop-off		<input type="checkbox"/> STD 10 Wk Days <input type="checkbox"/> 5 Wk Days <input checked="" type="checkbox"/> 2 Wk Days <input type="checkbox"/> 24 Hour														
Relinquished by:		Date		Time		Received by:		Notes:										
		5/23/19		15:50		1918												
Relinquished by:		Date		Time		Received by (Laboratory):												
		5/23/19		18:18		J. mmmmm												
Logged by (Laboratory):		Date		Time		Checked by (Laboratory):												
Preservative Key: 1-HCl 2-HNO ₃ 3-H ₂ SO ₄ 4-NaOH 5-Na ₂ S ₂ O ₃ 6-NaHSO ₄ 7-Other 8-4°C 9-5035																		



HS19051442

Cardno
Deer Park Fire 002 Day 20

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.

2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.

3. The Chain of Custody is a legal document. All information must be completed accurately.

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Sample on ice, cooling in cooler